IN THE CLAIMS:

1. (Canceled)

2. (Canceled)

3. (Currently amended) A method for evaporative leak detection of an automotive vehicle fuel system including a tank having vapor at a known pressure at a first point in time, the method comprising:

supplying from the tank fuel being combusted by the automotive vehicle;

measuring and recording a first temperature of the vapor at substantially the first point in time, which is not during the supplying;

measuring and recording a second temperature and a measured pressure of the vapor at a second point in time, which is not during the supplying;

computing a temperature-compensated pressure based on previously measured values; and

comparing the temperature-compensated pressure with the measured pressure at a second point in time to detect a leak,

wherein the temperature-compensated pressure is computed as a function of the known pressure at the first point in time and of the measured temperatures,

~~The method according to claim 2,~~ wherein the function comprises:

$$P_c = P_1(2-T_2/T_1)$$

where P_c is the temperature-compensated pressure, T_1 is the first temperature at the first point in time and T_2 is the second temperature at the second point in time.

Claims 4-16 (Canceled).

17. (Currently amended) A method for evaporative leak detection in a fuel system of an automotive vehicle, the method comprising:

supplying with the fuel system fuel being combusted by the automotive vehicle;

measuring and recording a first temperature and a first vapor pressure in the fuel system at a first point in time, which is not during the supplying;

measuring and recording a second temperature and a second vapor pressure in the fuel system at a second point in time, which is not during the supplying;

compensating the first vapor pressure based on the first and second temperatures, thereby defining a temperature-compensated first vapor pressure; and

comparing the temperature-compensated first vapor pressure with the second vapor pressure to detect a leak in the fuel system between the first and second points in time,

wherein the temperature-compensated first vapor pressure is computed as a function of the known pressure at the first point in time and of the measured temperatures,

wherein the function comprises:

$$P_c = P_1(2-T_2/T_1)$$

where P_c is the temperature-compensated first vapor pressure, T_1 is the first temperature at the first point in time and T_2 is the second temperature at the second point in time.

18. (Canceled)

19. (Currently amended) A method of evaporative leak detection for a fuel system of a vehicle including an internal combustion engine and a fuel tank, the fuel system having fuel vapor at a known pressure at a first point in time, the method comprising:

combusting in the internal combustion engine fuel from the fuel tank;

measuring at substantially the first point in time a first temperature of the fuel vapor, the first point in time is not during the combusting,

measuring at a second point in time a second temperature of the fuel vapor and a measured pressure of the fuel vapor, the second point in time is not during the combusting;

computing a temperature-compensated pressure based on:

the known pressure of the fuel vapor at the first point in time

the first temperature of the fuel vapor, and the second temperature of the fuel vapor; and

comparing the temperature-compensated pressure with the measured pressure at the second point in time to detect a leak.

~~The method according to claim 18,~~ wherein the computing the temperature-compensated pressure comprises:

$$P_c = P_1(2-T_2/T_1)$$

where P_c is the temperature-compensated pressure, T_1 is the first temperature at the first point in time and T_2 is the second temperature at the second point in time.

20. (Currently amended) The method according to claim 19 ~~18~~, further comprising:

recording at substantially the first point in time a first temperature of the fuel vapor; and

recording at a second point in time a second temperature of the fuel vapor and a measured pressure of the fuel vapor.

21. (Currently amended) The method according to claim 19 ~~18~~, wherein the second point in time follows the first point in time.

22. (Previously presented) The method according to claim 21, wherein the combusting occurs separately from the measuring.

23. (Currently amended) A method for evaporative leak detection for a fuel system of including an engine and a fuel tank, the method comprising:

supplying fuel from the fuel tank to the engine;

measuring and recording a first temperature and a first vapor pressure in the fuel system at a first point in time, which is not during the supplying fuel;

measuring and recording a second temperature and a second vapor pressure in the fuel system at a second point in time, which is not during the supplying fuel;

compensating the first vapor pressure based on the first and second temperatures,

thereby defining a temperature-compensated first vapor pressure; and

comparing the temperature-compensated first vapor pressure with the second vapor pressure to detect a leak in the fuel system between the first and second points in time,

wherein the temperature-compensated first vapor pressure is computed as a function of the known pressure at the first point in time and of the measured temperatures,

wherein the function comprises:

$$P_c = P_1(2-T_2/T_1)$$

where P_c is the temperature-compensated first vapor pressure, T_1 is the first temperature at the first point in time and T_2 is the second temperature at the second point in time.

24. (Previously presented) The method according to claim 23, further comprising:

recording the first temperature and the first vapor pressure in the fuel system at the first point in time; and

recording the second temperature and the second vapor pressure in the fuel system at the second point in time.